

## **REMARKS**

This is in response to the Office Action dated June 13, 2007.

Attached is a Petition for Three-Month Extension of Time. Applicant hereby authorizes the Commissioner to charge Deposit Account No. 08-1500 in the amount of \$525 for payment of the fee and any additional fees that may be associated herewith.

Claims 1-2, 4, 17 and 25-26 have been previously canceled. Claims 3, 5-16, 18-21, 23-24 and 29 have been previously presented. Claims 22, 27 and 28 are currently amended.

Claims 3, 5-8, 12, 13, 15-24 and 27-29 have been rejected under 35 USC 102(b) as being anticipated by United States Patent No. 6,071,115 to Carbone et al. Reconsideration of the rejection is respectfully requested.

Independent claim 22 has been amended to include a burner assembly comprising: a housing providing a combustion chamber having a series of spaced heat exchanger tubes; a body having a single gas supply leading into a cavity defined within the body acting as a mixing chamber in which gas and air mixes; a single, planar burner plate having a plurality of ports or group of ports having a center aperture surrounded by a series of ports on an annular path arranged in a spaced configuration and attached to a front end of the body, the plate being disposed in relation to the combustion chamber; the series of heat exchanger tubes being arranged in a predefined configuration; and the gas and air mixture can leave the cavity via each of the plurality of ports or group of ports and combusts upon passing through the ports such that the single planar burner plate forms a flamestrip, the heat exchanger tubes having a series of inlets, and the burner plate ports provided at spaced locations so as to allow heat and/or flame to be directed to the heat exchanger tube inlets by the burner assembly.

In Applicant's currently amended claim 1, the gas/air mixture can leave the cavity via each of the plurality of ports or group of ports. However, in the '115 Carbone et al patent the gas/air mixture is deliberately passed along the central aperture 33, 52 to combust. The other ports in the group of ports in Carbone et al only allow air to pass therethrough, and not the air/gas mixture as in Applicant's invention.

Further in Applicant's invention the air/gas mixture combusts upon passing through the ports such that the single planar burner plate forms a flamestrip. However, the secondary air flow in the '115 Carbone et al patent is used to control the combustion which occurs at port 52. As further stated in the abstract of the '155 Carbone et al patent, "the secondary air flowing through the secondary air ports forms relatively high velocity."

There is no disclosure in the '115 Carbone et al patent of Applicant's provision of the additional ports which allow the passage of an air/gas mixture therethrough. Indeed, when one refers to the diagrams and to the general description of the '115 Carbone et al patent, it is not possible for the gas/air mixture to reach the secondary air ports, as the air/gas mixture is channeled along the venturi nozzle 33 to the outlet 52. The ports in the Carbone et al '115 patent are referred to as 'secondary ports' as set forth at Col. 6, line 56 to Col. 7, line 4; Col. 7, lines 20-27.

Applicant sincerely believes that the '115 Carbone et al patent does not disclose Applicant's currently amended claim 1 and therefore respectfully requests reconsideration of the rejection.

Claims 3, 5-16, 18-21, 23 and 24 depend upon independent claim 22 and are believed to be patentable over the '115 Carbone et al patent for the reasons as set forth above.

Independent claim 27 is currently amended to include a burner assembly for connection to a heat exchanger comprising: a series of spaced heat exchanger tubes, the burner assembly is

provided with a single, planar burner plate disposed in relation to a chamber, the chamber conveying a pre-mixed gas and air mixture to a side of the burner plate and the single, planar burner plate includes a plurality of ports having a center aperture surrounded by a series of ports or groups of ports formed therein in spaced configuration, the premixed gas/air mixture leaves the burner by passing from the chamber through each of the ports in the burner plate, the premixed gas/air mixture is ignitable upon passing through the ports such that the plate forms a flamestrip, the heat exchanger tubes have a series of inlets and the ports being arranged to direct the ignited mixture into each inlet so as to allow heat and/or flame to be provided to the inlets by the common burner assembly.

In Applicant's currently amended claim 27 the premixed gas/air mixture leaves the burner by passing from the chamber through each of the ports in the burner plate. However, only secondary air is allowed to pass through the other or secondary ports in the group of ports in Carbone et al patent. Clearly, the gas/air mixture passing through each of the ports in the burner plate is not taught or disclosed in the '115 patent and, therefore, Applicant request reconsideration of the rejection.

In addition, Applicant's invention provides that the heat exchanger tubes having a series of inlets and ports being arranged to direct the ignited mixture into each inlet so as to allow heat and/or flame to be provided to the inlets by a common burner assembly. However, in the Carbone et al patent, the air/gas mixture is in each case specifically channeled to one particular inlet of each of the combustion chambers. The mixing chamber in Applicant's invention is common to and in connection with each of the ports on the burner plate, as the burner plate is disposed in relation to the combustion chamber so as to allow access of the gas/air mixture held in that chamber to all of the ports.

Independent claim 28 has been currently amended to provide a burner assembly for connection to a heat exchanger comprising: a series of spaced heat exchanger tubes, a single, planar burner plate is disposed in relation to a chamber conveying a premixed gas/air in a mixture to a side of the burner plate and the single, planar burner plate includes a plurality of groups of ports, each group of ports having a center aperture surrounded by a series of ports, the groups of ports formed therein in spaced configuration through which the pre-mixed gas/air mixture leaves the burner through each of said ports, the premixed gas/air mixture being ignitable upon passing through the ports such that the plate forms a flamestrip, the heat exchanger tubes having a series of inlets and the ports are arranged to direct the ignited mixture into each inlet so as to allow heat and/or flame to be provided to the inlets by the common burner assembly and each group of ports includes a large center aperture surround by the series of ports which are small in size.

In Applicant's claim 28 the single, planar burner plate includes a plurality of groups of ports, each group of ports having a center aperture surrounded by a series of ports, the groups of ports formed therein in spaced configuration through which the pre-mixed gas/air mixture leaves the burner through each of the ports, the premixed gas/air mixture being ignitable upon passing through the ports such that the plate forms a flamestrip. However, in the '115 Carbone et al patent the gas air mixture is deliberately passed along the central aperture 33, 52 to combust. The other ports in the group of ports in Carbone et al only allow air to pass therethrough, and not the air/gas mixture as in Applicant's invention. Applicant believes that independent claim 28, along with dependent claim 29 is not disclosed in the '115 Carbone et al patent and therefore respectfully requests reconsideration of the rejection.

In addition, Applicant's invention provides that the heat exchanger tubes having a series of inlets and ports being arranged to direct the ignited mixture into each inlet so as to allow heat and/or flame to be provided to the inlets by a common burner assembly. However, in the Carbone et al patent, the air/gas mixture is in each case specifically channeled to one particular inlet of each of the combustion chambers. The mixing chamber in Applicant's invention is common to and in connection with each of the ports on the burner plate, as the burner plate is disposed in relation to the combustion chamber so as to allow access of the gas/air mixture held in that chamber to all of the ports.

The '115 Carbone et al patent does not disclose Applicant's invention as set out in the claims since the Carbone et al patent does not disclose the provision of a single burner plate with a series of groups or sets of ports, with each of the ports being in connection with an air/gas mixing chamber so that an air/gas mixture can pass through each of the ports in each of the groups. Instead, in the Carbone et al patent, the air/gas mixture only passes through the central port and only air passes through the peripheral ports thereto. Therefore, Applicant believes that these features are not taught or disclosed in the '115 Carbone et al patent and respectfully request reconsideration of the rejection.

Claims 9-11 have been rejected under 35 USC 103(a) as being unpatentable over United States Patent No. 6,017,115 to Carbone et al. Reconsideration of the rejection is respectfully requested.

Claims 9-11 depend upon independent claim 22. Applicant believes that claim 22 is patentable over the '115 Carbone et al patent for the reasons stated above and, therefore, further believes that dependent claim 9-11 are also patentable for the same reasons.

Claim 14 has been rejected under 35 USC 103(a) as being unpatentable over United States Patent No. 6,071,115 to Carbone et al in view of United States Patent No. 3,526,367 to Trihey. Applicant respectfully requests reconsideration of the rejection.

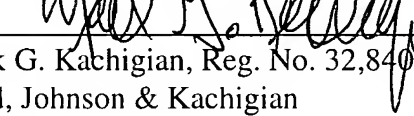
Claim 14 depends upon independent claim 22. Applicant believes that claim 14 is patentable over the cited patents for the reasons as stated above with reference to independent claim 22.

Applicant believes that the application is now in condition for allowance and such action is earnestly solicited. If any further issues remain, a telephone conference with the Examiner is respectfully requested. If there are any charges associated with this amendment, the Examiner is hereby authorized to charge such fees to Deposit Account 08-1500.

HEAD, JOHNSON & KACHIGIAN

Respectfully submitted,

<sup>12 mar</sup>  
Dated: ~~13~~ December 2007

By:   
Mark G. Kachigian, Reg. No. 32,840  
Head, Johnson & Kachigian  
228 West 17<sup>th</sup> Place  
Tulsa, Oklahoma 74119  
(918) 587-2000